CLAIMS

What is claimed is:

1. An isolated polynucleotide selected from the group consisting of:

   (a) a polynucleotide having a sequence comprising the nucleotide sequence SEQ ID NO: 1, and functional fragments thereof;

   (c) a polynucleotide encoding a polypeptide having a sequence that is at least 75% homologous to SEQ ID NO: 2, and functional fragments thereof; and

   (d) a polynucleotide capable of hybridizing under stringent conditions to a polynucleotide having a sequence comprising the nucleotide sequence SEQ ID NO: 1, and functional fragments thereof.

2. The polynucleotide of claim 1, linked to a second nucleotide sequence encoding a fusion polypeptide.

3. The nucleotide of claim 2 wherein the fusion polypeptide is a heterologous signal peptide.

4. The nucleotide of claim 2 wherein the polynucleotide encodes a functional fragment of the polypeptide having the SEQ ID NO: 2.

5. An isolated polypeptide having a sequence that is at least 75% homologous to SEQ ID NO: 2, and functional fragments thereof.

6. The polypeptide of claim 5, wherein said polypeptide has the sequence of SEQ ID NO: 2 or functional fragments thereof.

7. A polypeptide comprising the polypeptide of claim 5 linked to a fusion polypeptide.

8. The polypeptide of claim 7, wherein the fusion polypeptide is a signal peptide.

9. The polypeptide of claim 7, wherein the fusion polypeptide comprises a heterologous polypeptide having adjuvant activity.

10. An expression cassette, comprising the polynucleotide of claim 1 operably linked to a promoter.

11. An expression vector, comprising the expression cassette of claim 10.

12. A host cell, comprising the expression cassette of claim 10.

13. The host cell of claim 10, wherein said host cell is a prokaryotic cell.

14. The host cell of claim 13, wherein said host cell is a eukaryotic cell.

15. A method for producing a recombinant polypeptide having SEQ ID NO: 2, comprising:

(a) culturing a host cell of claim 12, under conditions that the allow the expression of the polypeptide; and

(b) recovering the recombinant polypeptide.

16. A vaccine vector, comprising the expression cassette of claim 10.

17. The vaccine vector of claim 16, wherein said host mammal is human.

18. The vaccine vector of claim 16, in a pharmaceutically acceptable excipient.

19. A pharmaceutical composition, comprising a immunologically effective amount of the vaccine vector of claim 14.

20. A method for inducing an immune response in a mammal, comprising:

administering to said mammal an immunologically effective amount of the vaccine vector of claim 16, wherein said administration induces an immune response.

21. A pharmaceutical composition, comprising an immunologically effective amount of the polypeptide of claim 5 and pharmaceutically acceptable diluent.

Sub D1

22. The pharmaceutical composition of claim 21, further comprising an adjuvant.

23. The pharmaceutical composition of claim 21, further comprising one or more known *Chlamydia* antigens.

24. A method for inducing an immune response in a mammal, comprising:

administering to said mammal an immunologically effective amount of the pharmaceutical composition of claim 21, wherein said administration induces an immune response.

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25. A polynucleotide probe reagent capable of detecting the presence of *Chlamydia* in biological material, comprising a polynucleotide that hybridizes to the polynucleotide of claim 1 under stringent conditions.

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26. ~~The polynucleotide probe reagent of claim 25, wherein said reagent is a DNA primer.~~

27. A hybridization method for detecting the presence of *Chlamydia* in a sample, comprising the steps of:

(a) obtaining polynucleotide from the sample;

(b) hybridizing said obtained polynucleotide with a polynucleotide probe reagent of claim 21 under conditions which allow for the hybridization of said probe and said sample; and

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(c) detecting said hybridization of said detecting reagent with a polynucleotide in said sample.

28. An amplification method for detecting the presence of *Chlamydia* in a sample, comprising the steps of:

(a) obtaining polynucleotide from the sample;

(c) amplifying said obtained polynucleotide using one or more polynucleotide probe reagents of claim 25; and

(d) detecting said amplified polypeptide.

29. A method for detecting the presence of *Chlamydia* in a sample comprising the steps of:

(a) contacting said sample with a detecting reagent that binds to the polypeptide having SEQ ID NO: 2 to form a complex; and

(b) detecting said formed complex.

30. The method of claim 29, wherein said detecting reagent is an antibody.

31. The method of claim 30, wherein said antibody is a monoclonal antibody.

32. The method of claim 30, wherein said antibody is a polyclonal antibody.

33. An affinity chromatography method for substantially purifying a polypeptide having SEQ ID NO: 2, comprising the steps of:

(a) contacting a sample containing said polypeptide with a detecting reagent that binds to said polypeptide to form a complex;

(c) isolating said formed complex;

(c) dissociating said formed complex; and

(d) isolating the dissociated polypeptide.

34. The method of claim 33, wherein said detecting reagent is an antibody.

35. The method of claim 34, wherein said antibody is a monoclonal antibody.

36. The method of claim 34, wherein said antibody is a polyclonal antibody.

37. An antibody that immunospecifically binds a polypeptide of claim 5, or a fragment or derivative of said antibody containing the binding domain thereof.

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add A5

add C14